

Rocks and Minerals / Another Way to Enjoy Creation

When I started university, I worked as an administrative assistant for an oil and gas laboratory company. Originally, I thought I would focus on chemistry. The university didn't have a chemistry major in their science programs, so I enrolled in the general science degree program. Later, as a full-time student, I decided to explore other fields of science and became fascinated with astronomy, but God had other plans. It took a while for me to admit that math and physics are

not my strongest subjects. Geology, on the other hand, was easy for me. Halfway through my degree, I decided I like rocks!

So, what are rocks, and what is so amazing about them? Well, rocks make up the hard surface of Earth, the moon, asteroids, and other solid bodies in our solar system and beyond. Mountains are made of rock, and so is the loose sand on the beach and the gravel in back alleys.

Continued on page 4



CREATION SCIENCE



CREATION SCIENCE
ASSOCIATION OF ALBERTA

Volume 52
Number 2

April
2025

Publication Mail Reg.
40013654
ISSN 0229-253X

Sugar Glider / Wonderful Enigma

The Wonderful Animal Enigma That Stymies Evolution

Sugar gliders look like chipmunks, glide like flying squirrels, and their young (called joeys like kangaroos), can live for several weeks after birth in their mother's pouch like opossums, and amazingly they belong in the same family as kangaroos. No wonder their origin has stymied evolutionists. The three types of gliders are so different that evolutionists propose that they "evolved at least three times independently in closely related glider species, including sugar gliders. But the question lingers as to how it evolved."⁽¹⁾

My grandson had several so this summary was written from first-hand experience. They are small animals that can be held in a child's hand. They glide by leaping from high places and sailing down to the ground. Flying squirrels and sugar gliders (also called *opossum gliders*) have many striking similarities: both have big eyes, a white

belly, and a thin-skin membrane stretched between their arms and legs designed to allow them to glide.

Although very similar animals, sugar gliders and flying squirrels belong to different taxonomic groups.⁽²⁾ Sugar gliders belong to Order Diprotodontia, Genus *Petaurus*, while flying squirrels are members of Order Rodentia and Genus *Sciurus*. Sugar gliders are marsupials and flying squirrels are rodents. *Sugar gliders* are named due to their predilection for

sugary foods (especially eucalyptus sap and flower nectar) and their ability to *glide* through the air.

Gliding Requires A Complex, Well-Designed System

The sugar glider's ability to glide is achieved by a membrane that runs from the hand's fifth finger to the foot's first toe. The finger and toe design are especially critical to be able to glide. Each foot has five digits including an opposable toe on each hind foot. The opposable toes lack claws and bend to enable them to touch all the other digits which allows them to firmly grasp tree branches. The second and third hind-foot digits are partially fused together, forming a handy grooming comb. The fourth sharp and elongated forefoot digit is designed to effectively extract insects hiding under tree bark.⁽³⁾ The precise design of this complex structure also varies between the three different sugar glider families.⁽⁴⁾

Continued on page 6



There is **MORE** to interest YOU!

From time to time, CSAA adds relevant new discussions to *HeadStart*, our amazing information resource. While many online discussions provide definitions and current views on an issue, *HeadStart* typically provides the history of how this science-related discipline came to be developed and what that means for us today. For example, within the past year we have added new topics related to dinosaurs and fossils, all written at the introductory level. All these items are posted under the *Investigate Further* banner. These topics include dinosaurs; extinct Alberta creatures (marine reptiles); record in sedimentary rock; geological column; and fossils.

But there is more! Recently CSAA added Chemical Elements, also written at an introductory level and also under the *Investigate Further* banner. This discussion introduces us to the Russian chemist who understood that the characteristics of the chemical elements had to be logical. If there was no pattern of relationships, then chemical reactions would not work (and there would be no life). As a result of Dmitri Mendeleev's work, we continue to enjoy the insights and information from the periodic table of elements that Mendeleev proposed. This situation demonstrates to us that everything created by God displays His logic and careful attention to detail.

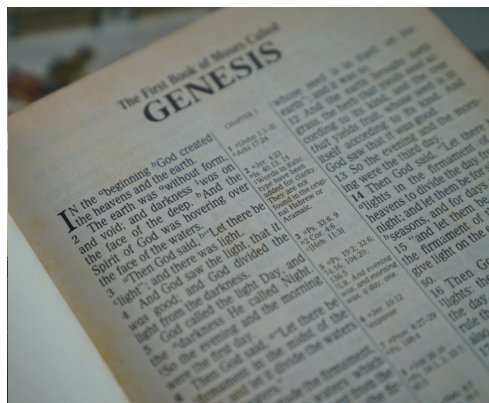


headSTART

Energy is another fascinating topic. We all know that we cannot live without energy. The sun is the ultimate source of energy that sustains life on earth. Written at the introductory level, we learn about energy flow and why energy is so hard to store. And we learn about food pyramids. Lots of food for thought! Enjoy.

Biosphere provides some really interesting insights into why earth is so perfectly suited for life (think Goldilocks and "just right!") This discussion, written at the introductory level, includes the cycle of mineral nutrients and the cycle of water, both of which are so essential to life. Without God's careful provision, we would not be here.

Lastly, CSAA presents under the banner of *Impact of Worldviews* (first section in *HeadStart*), a new discussion on a topic which is taught at most seminars. The JEPD hypothesis or the Documentary Hypothesis is a product of higher critical analysis of Biblical documents. The foundational assumptions behind the development of this view, include evolution. See for yourself the impact of this approach to Biblical studies. Do not be intimidated by the attitudes and conclusions of these so-called scholarly studies. Other scholars alternatively declare that the Biblical documents are inspired and provided for our instruction and edification.



Dialogue

Volume 52 / #2 / APRIL 2025

Creation Science Dialogue is a quarterly publication of the Creation Science Association of Alberta (CSAA).

Its purpose is to discuss the creation model of origin in terms of scientific details.

Subscription for 1 year \$8.00

Return undeliverable Canadian addresses to:
PM 40013654
Creation Science Dialogue

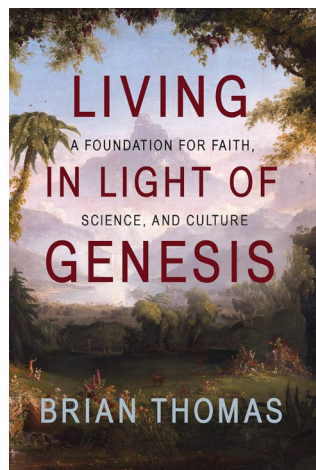
Creation Science Association of Alberta
5328 Calgary Trail
Suite 1136, Edmonton, Alberta
T6H 4J8

Other Creation Science Associations

- Creation Science of Saskatchewan Inc.
P.O. Box 26
Kenaston, SASK. S0G 2N0
- Creation Science Association of B.C., P.O. Box 31725,
RPO Meadowvale SC,
Pitt Meadows BC, V3Y 2H1
- Creation Ministries International
300 Mill Street, Unit 7
Kitchener, ONT, N2M 5G8
- Institute for Creation Research
1806 Royal Lane
Dallas, TX. 75229
- Answers in Genesis - Canada
115 Scott Avenue
Paris ON, N3L 3K4

Visit us at
www.create.ab.ca

In the early years of the existence of Creation Science Association of Alberta, CSAA brought in many excellent speakers from the Institute for Creation Research. All these speakers were scientists with excellent experience and credentials. These included biochemist Dr. Duane Gish, geologist Dr. Steve Austin and biologist Dr. Gary Parker. In more recent years, ICR moved from California to Texas and set about becoming established in a new region. Now once again, CSAA is delighted that one of ICR's research scientists, Dr. Brian Thomas, has agreed to be our featured speaker for Creation Weekend on October 24 and 25,



2025. The sessions are scheduled to take place at Providence Canadian Reformed Church which hosted the event in spectacular fashion in October 2024 (12905 122 Avenue NW in Edmonton). Dr. Brian Thomas is a particularly interesting choice for featured speaker. Not only can he point to impressive recent research, published in a technical journal, but he has interests and studies on a broad spectrum of other creation-based research as well. In 2019 Dr. Thomas completed his doctoral research project in paleo-biochemistry from the University of Liverpool. That study involved identification and measurements of original organic material in bone from an exceptionally well-preserved *Edmontosaurus* duckbill dinosaur from Montana. Now in 2025, Dr. Thomas was one of seven authors to publish on this topic in the journal *Analytical Chemistry*. Here we discover that there is original organic material in a bone from this extinct dinosaur. If this dinosaur seems particularly interesting to us locally, it is. Some remains of *Edmontosaurus* occur in a bonebed right here in Edmonton!

On the topic of original organic material found in fossils, Dr. Thomas has also co-authored and published a list of documented occurrences of organic material (produced in life) in fossil specimens from around the world. Each listing records year of publication, what fossil organism was involved and what tissue was identified with unfossilized matter, the conventional secular age assigned to the fossils (always in millions of years), the publication details reporting this and a link to the paper. In a young world, such discoveries are not a surprise, but if the fossils were really millions

of years old, these discoveries are a major problem.

Dr. Thomas is scheduled to speak on this exciting topic **Fresh Fossils from Four Continents** on Friday evening October 24, 2025 at 7:00 p.m.

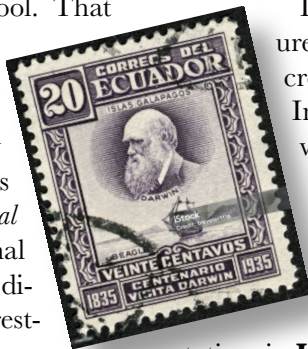
Dr. Thomas has also participated in many other exciting projects. He has studied how statistical analysis of character traits tells us something about what are the created kinds among dinosaurs. This fascinating topic involves a demonstration that birds are not descended from dinosaurs as popular scientific interpretations would have us believe.

Dr. Thomas draws on his broad familiarity with interesting origins issues in his presentations on Saturday. In the morning, in the session **The Beginning of Life**, he demonstrates how amazing molecular machines are essential to the workings of a living cell, producing features that leave us awestruck. (Formerly Dr. Gordon Wilson wowed us with his discussion of molecules which are needed in the living cell, and Dr. Thomas continues this fascinating story to even more spectacular heights.)

Lastly Dr. Thomas turns his attention to the failure of Darwinism to explain anything about how creatures adapt in response to their environment. Indeed, ICR has an experimental study underway to apply *engineering* principles to this question. This is certainly a novel approach to a genetic and ecological issue and many people who do not necessarily like topics on natural selection and adaptability, may love this family friendly discussion. The title of the presentation is **How Creatures Adapt**, scheduled for early Saturday afternoon.

Dr. Thomas has published on numerous topics including the apologetics book *Living in the Light of Genesis*. You can buy that and other interesting resources at Creation Weekend.

Be sure not to miss these insightful presentations from an exciting scientist. CSAA continues the tradition of providing excellent Christian witness, challenging us to share our hope with all, especially with upcoming generations. **Challenges, Motivation and Hope.**



Geologists generally classify rocks into three main groups based on how they formed. Igneous rocks are formed from magma. Magma is hot, melted rock that originates deep below the Earth's crust and rises toward the surface. When it erupts onto the surface through volcanoes, it is called lava. Cooled magma and lava form igneous rocks.

Another type of rock is sedimentary rock. This is formed when pre-existing rocks become broken up by weathering and erosion. The continents are

covered in layers upon layers of sedimentary rock laid down during the Genesis Flood. These layers include sandstones, mudstones, limestones, and coal.

The third rock type is metamorphic rock. This name comes from the same Greek word as *metamorphosis* which describes a caterpillar changing into a butterfly. Metamorphic rocks are formed when igneous or sedimentary rocks are subjected to extra heat and pressure. This causes the mineral crystals in the rock to change shape and squeeze together more tightly, possibly even melting a bit in the process. When magma intrudes into the rocks from below, it causes contact metamorphism. It can change sandstone made of mostly quartz grains into

quartzite and limestone into marble. Regional metamorphism is a result of mountain-building forces (Bishop, Hamilton, and Woolley 2007, *Firefly Guide to Minerals, Rocks and Fossils* pp. 152-153) like those that resulted from the catastrophic plate tectonics of the Flood. This changes some rocks into schist or gneiss (pronounced "nice").

I still have the rock and mineral sample sets that were included in the lab kit for my physical geology course. I also have several rock, mineral, and fossil samples I bought at rock shows over the last few years. One of my favourite things about rocks is the variety of minerals. Most rocks are made of mixtures of minerals. David McQueen explains minerals this way in *The Mineral Book*:

1. A mineral is a special group of compounds created by God.
2. A mineral has a fixed chemistry.
3. A mineral contains a crystalline structure.
4. A mineral is inorganic.
5. A mineral exists as a solid (p. 26).

Not only is there a variety of minerals, but there are varieties of the same mineral. A common example of a mineral is table salt (NaCl), also called halite. Most table salt is white because it has been purified, but halite can also

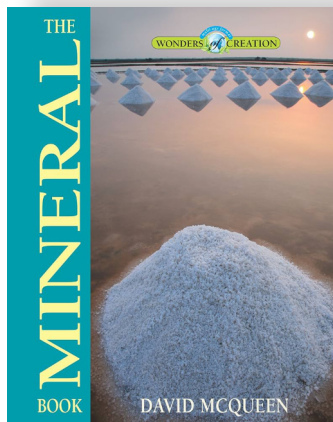
be pink or other colours, depending on what other minerals or chemical elements might be naturally included (Bishop *et al.* p. 58). Halite is a kind of sedimentary rock known as an evaporite. Evaporites generally form when mineral-rich water—in this case, salt-water—evaporates and leaves the minerals behind. I have a pretty pink chunk of halite I bought at a rock show. Some vendors also sell lamps and tea light holders made of halite.

Another common mineral is quartz (SiO_2). Quartz usually starts as a mineral in igneous rocks. Another name for it is silica. The amount of silica in lava determines how viscous or runny it is. Less silica produces a runnier lava like at Kilauea in Hawai'i. More silica produces a thicker, often explosive lava like at Mount St. Helens. Milky quartz is the white quartz often used in landscaping, but quartz comes in other colours, too. Rose quartz is pink to rose-red. Citrine is yellow to orange. Smoky quartz is brown or grey to almost black. Amethyst is purple (Bishop *et al.*, pp. 130-131). In my collection, I have a pair of small, clear quartz crystals I bought at the Royal Tyrell Museum, and my sister gave me a chunk of amethyst crystals for Christmas last year. I also have a geode



full of quartz crystals that my dad bought for my birthday when he was on vacation in Texas a few years ago. The crystals look like wet sugar. I also have a rock I bought at a show that has smoky quartz along with blue albite ($\text{NaAlSi}_3\text{O}_8$) and pink tourmaline ($\text{Na}(\text{Li}, \text{Al})_3\text{Al}_6(\text{BO}_3)_3\text{Si}_6\text{O}_{18}(\text{OH})_4$). Some minerals have really complicated chemical formulas!

The largest rock currently in my collection is a sedimentary rock called a calcareous tufa. It is another type of evaporite. I weighed it recently and found out it is 43 lbs, even though it is only a little more than a cubic foot of rock. It is mainly made of calcite (CaCO_3) precipitated out of water flowing through a cave, similar to how stalactites and stalagmites form. Limestone is also made of calcite. Some of it is precipitated out of seawater, but it can also be filled with the calcite shells of animals like clams, oysters, and crinoids (sea lilies). Chalk is a kind of limestone made of the shells of micro-organisms called coccolithophores and foraminifera (Bishop *et al.*, pp. 202-205). These limestones are more



sediments laid down during the Flood.

Another of my favourite rocks in my collection is a septarian nodule about five inches in diameter. This is a kind of concretion. In other words, it is a blob of rock—in this case, mudstone—that has been cemented together,

making it harder than the surrounding rock so it can be detached and removed easily (Bishop *et al.*, p. 209). When I bought it, it looked like a mud-covered horse apple in a Ziploc bag. I took it home and washed it off and eventually got it cut open to reveal the calcite veins and crystals inside.

Gemstones are also minerals. I already mentioned amethyst. Another mineral is corundum (Al_2O_3). Corundum also comes in different colours. We call the red variety ruby and the blue variety sapphire. Some crystals can even be yellow, brown, or green, and sometimes crystals can be opalescent and show a six-pointed star. We call these star sapphires and star rubies (Bishop *et al.*, p. 47). Corundum glows bright pink under a black light.

Learning about different rocks and minerals can be a lot of fun. If you

want to start your own collection, you can start in your own neighbourhood. *The Mineral Book* by David McQueen (Master Books) has some good tips for collecting. You can also check out rock and fossil shows, although it will cost more money and some of the vendors will be more into New Age mysticism and the occult than real geology. Some shows run a silent auction where you might be able to find some good deals.

You can also look into joining a local rockhounding club. They generally have some members who are professional geologists and can prove to be very knowledgeable, and there may be opportunities for rockhounding field trips. The local club I joined also provides various classes in lapidary (cutting and polishing) and jewelry-making, and there are drop-in sessions where I can come in and use the equipment for a small fee. The warning with joining a club is that they may be very secular, so it is important to weigh the pros and cons and pray about whether to join.

Is it not amazing how we can see that God created even the rocks to demonstrate His wisdom and artistry. Rock collecting is another way to enjoy the Creation!

See: headstart.create.ab.ca/term/biosphere/



Their Ingenious Biomechanical Designed Gliding Mechanism

In order to explain the many design differences of the different sugar glider breeds, evolutionists are forced to postulate that

“Gliding has evolved independently at least six times in mammals. Multiple hypotheses have been proposed to explain the evolution of gliding. These include the evasion of predators, economical locomotion or foraging, control of landing forces, and habitat structure.... It is unlikely that any one of these hypotheses exclusively explains the evolution of gliding.”⁽⁵⁾

Ironically no evidence exists that they evolved once, let alone six times. To glide, the animal launches itself from a tree while spreading its limbs to properly stretch out the gliding membrane. The direction and flight path for as far as 100 meters is controlled by making subtle changes in the membrane's curvature shape. The system requires a high level of coordinating its fingers, toes, membrane, nerves, veins, and tendons to function as a unit, all controlled by the animal's tiny well-designed brain.

The evidence for design is eloquently illustrated in its eyes and ears. As a nocturnal animal, it requires large eyes to achieve good vision at night. Its large eyes also make sugar gliders alluring as pets. The eyes are set far apart, allowing precise triangulation when launching from a tall tree to reach their desired landing location.

Marsupial Evolution Stymies Evolutionists

One of the many evolutionary headaches for Darwinists is the alleged development of marsupials from placentals. The major difference between them is the means of reproduction. Placental mammals are nourished by a placenta to enable them to spend a long time developing inside the

mother's body before being born. In contrast, sugar gliders live close to 74 days within the marsupial pouch, the marsupium. Larger animals, such as kangaroos, remain there for eight long months!

Changes Required to Evolve a Placental Mammal into a Marsupial Mammal

Since sugar gliders are marsupial mammals and flying squirrels are non-marsupial mammals, major differences exist. Flying squirrels do not have a pouch, but their young develop in a placenta, as occurs in humans. When ready to be born, they are expelled by the birth process and are breastfed by the mother. Evolutionists explain these differences as due to flying squirrels having evolved from a non-marsupial mammal and sugar gliders from a marsupial. Although major birthing differences exist, comparing sugar gliders and flying squirrels side by side reveals a very similar design!

Theory of Sugar Glider Evolution

The most common theory is that both sugar gliders and flying squirrels originally evolved from some “rat-like” common ancestor, a mammalian rodent. The evolutionary ancestor of the sugar glider is speculated to have been *Sinodelphys szalayi*, which lived in the ‘Cretaceous Period’ with the dinosaurs. Evolutionary time assumptions date this event as about 125 million years ago. This claim raises a big problem for evolution, namely “specifically how could *S. szalayi* evolve from a placental mammal into a marsupial?” as the theory postulates. Only one fossil specimen of *S. szalayi* is known, consisting of a slab and its counter slab. This eutherian (placental mammal), although judged as astonishingly complete, did not provide any evidence for their evolution.⁽⁶⁾

All known eutherians lack epipubic bones, which allows for the expansion of the abdomen pouch to hold their offspring. Epipubic bones are present in both marsupial and monotreme mammals besides sugar gliders. Two branches of modern mammals, placental and marsupial, supposedly evolved gliding, which according to evolutionists was at least 100 million years after modern mammals evolved, eventually leading to today's marsupial sugar gliders

by
Jerry
Bergman



and flying squirrels.

The theoretical marsupial family tree produced over 60 years ago has not changed much since then: no evidence exists for the evolution of any marsupial from the last common ancestor, including the sugar glider.⁽⁷⁾ The leading expert on marsupials, David Bergamiuni, admits “No one knows when the first marsupials came to Australia, how they got there, or even where they came from... [this] sums up the best present opinions about their evolution and radiation.”⁽⁸⁾ While it is claimed that they evolved from very different ancestors, placental and marsupial, over 100 million years ago, evolutionists maintain that their remarkable similarity is conveniently due to ‘convergent evolution.’

What cannot be explained is why the sugar gliders and flying squirrels are in many ways very similar. Both use similar membranes (called a patagium) for flying and both have average flight-gliding distances of from 50 to 65 feet. Except for color differences, they look remarkably similar, requiring some detailed knowledge about the animals to discern the differences. Both are very similar in size and weight, and the diet of both includes insects.

The main problem for evolution is, after flying squirrels and sugar gliders evolved from some unknown common ancestor, each line separately evolved into the very different genera, placentals versus marsupials. Then, the very different flying squirrels and sugar glider genera, theoretically evolved for another 100 million years by convergent evolution to become very similar as existing today.⁽⁹⁾

Convergent evolution is used to explain, *actually explain away*, the embarrassing lack of evidence for marsupial evolution. Darwinists offer convergent evolution as the evolutionary rescue device, even though fossil evidence for this theory is totally lacking. Nevertheless:



“Convergent evolution is a recurring theme in marsupial history, and the diprotodonts are no exception. The diverse diprotodont body forms and lifestyles show striking similarity with mammals of several other orders... The sugar glider (*Petaurus breviceps*) and the Leadbeater’s possum resemble species of flying and non-flying squirrel respectively.”⁽¹⁰⁾

The convergent evolution explanation, for which no empirical supporting evidence exists, relies on the belief that similar environments gradually caused the two animals from two very different evolutionary tree branches (the marsupial and placental) to evolve into very similar animals.⁽¹¹⁾

Summary

The wonder and beauty of sugar gliders is obvious, and accounts for their enormous popularity. However, the evolutionary specifics of sugar gliders have stymied evolutionists ever since they were discovered. Evolutionists are no closer to proving their evolution than when they were first discovered.

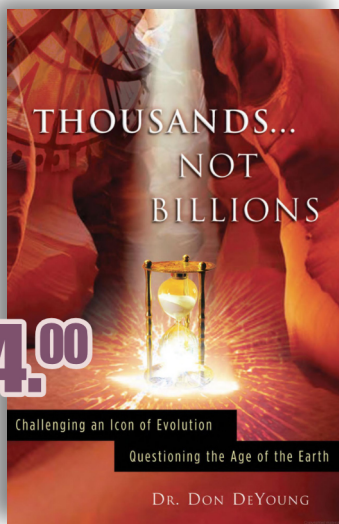
References

1. Callier, V. 2024. How sugar gliders got their wings. *Scientific American*; <https://www.scientificamerican.com/article/how-sugar-gliders-got-their-wings/>.
2. Croft, August. 2023. Flying squirrel vs. sugar glider: What are the differences? *AZ Animals*. From <https://a-z-animals.com/blog/flying-squirrel-vs-sugar-glider/>; updated on September 1.
3. Smith, Meredith J. 1973. *Petaurus breviceps*. *Mammalian Species* (30):1–5, June 13.
4. Hutchins, Michael (editor). 2003. *Grzimek’s Animal Life Encyclopedia*. Detroit, MI: Thompson Gale, p. 33.
5. Byrnes, Greg, et al. 2011. Ecological and biomechanical insights into the evolution of gliding in mammals. *Integrative and Comparative Biology* 51(6):991–1001, December, p. 991; <https://doi.org/10.1093/icb/acr069>.
6. Luo, Zhe-Xi, et al. 2003. An early Cretaceous tribosphenic mammal and metatherian evolution. *Science* 302(5652):1934–1940, doi:10.1126/science, December 12.
7. Bergamini, David. 1972. *The Land and Wildlife of Australia*. New York, NY: Time-Life Books, pp. 88–89.
8. Bergamini, 1972, pp. 88–89.
9. Daley, J. 2017. Exceptional fossils show ancient, winged mammals may have glided above the dinosaurs. *Smithsonian*. From https://www.smithsonianmag.com/smart-news/mammal-ancestors-were-gliding-above-dinosaurs_August_10_
10. Hutchins, 2003, p. 33.
11. Daley, 2017.



*Getting the facts
is only half the
job, the other
half is to use them
intelligently!*

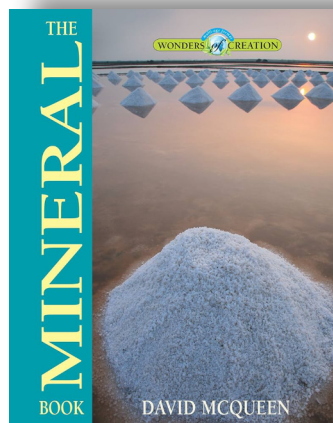
\$14.00



Donald B. DeYoung
Thousands not Billions

Sometimes it is helpful to return to topics which were popular in the past. The age of the earth and (radiometric) dating is one such topic. This book discusses many important issues concerning dating of rocks and extinct creatures. Starting with a clear presentation of basic ideas, this book then proceeds to discuss interesting studies. Every bit of insight is helpful. A chapter on the reliability of Scripture concludes the book.

Paper line drawings/200 pages



David McQueen
The Mineral Book

It is fun to collect pretty stones, but much more is involved than just appearance. This book makes the collecting process so much more meaningful. After preliminary information, we learn about minerals mentioned in the Bible, and characteristics of various minerals and gems, and how to build a collection. Junior high and above, this challenge is for you!

*Hardcover/full colour
/94 pages*

\$18.00

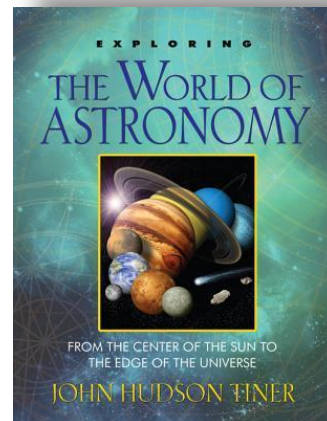


Don Johnson
Programming of Life

This beautifully illustrated video examines mathematical issues concerning the living cell. We soon discover that information is a critical feature of systems of life. Instructions on how to build and run the living cell, all require information. It really makes us think of computers. High school students, pastors, teachers and others will love these fascinating insights!

DVD 44 minutes

\$16.00



John Hudson Tiner
Exploring the World of Astronomy

Junior High students in grades 7 – 9 are interested in lots of things including the might sky. This book carries the reader from the centre of the sun to the edge of the universe. Along the way we encounter planets, stars, galaxies and lots of other features. This book provides excellent tools for finding and identifying many of these distant objects. And it challenges the reader to further investigations.

Paper/black and white/171 pages

\$22.00

Total order	\$	.
Add \$15.00 for S/H	\$	.
Subscription (\$8.00)	\$	.
Donation	\$	.
Total enclosed	\$	.
Free Catalogue	\$	0.00
Total	\$	-

Make cheque or money order payable to:
Creation Science Association

Please fill in order form and mail to: **Creation Science Association of Alberta,
5328 Calgary Trail, Suite 1136 - Edmonton, Alberta, T6H 4J8**

Name:

Address:

City:

Postal Code/Zip:

Email:

List titles & quantity ordered below:

Address Label

Order online at: www.create.ab.ca